# AMERICAN MUSEUM NOVITATES

Published by

Number 1272 THE AMERICAN MUSEUM OF NATURAL HISTORY January 8, 1945

New York City


## THE MELANOSTOMINI OF THE NEOTROPICAL REGION (DIPTERA, SYRPHIDAE)


BY C. L. FLUKE[1]


There are several genera and subgenera belonging to this tribe in the Neotropical region. Numerous species occur in the genera *Melanostoma* and *Rhysops*, especially in the higher altitudes of the Andes. This review is based upon several collections, the most important by F. Martin Brown from Ecuador[2] and by Fritz Plaumann from southern Brazil. Dr. C. H. Curran of the American Museum has lent specimens of the Williston collection from Chapada and Mexico, and Dr. F. M. Hull of the University of Mississippi has sent me his material for study. Thanks are due to all these gentlemen for their willing and generous help. Types of the new species are deposited in the American Museum of Natural History.

### Tribe **Melanostomini**

The Melanostomini belong to the subfamily Syrphinae. Face entirely black, although the slopes may often be covered with white or yellow pollen-like pubescence, interhumeral region without pile, discal cross vein (r-m) well before the middle of the discal cell, squamae and plumule well developed, wings generally hyaline or tinged brownish or with faint clouds at cross veins or at the apex.

#### TABLE OF GENERA

1. Face narrow, receding; not at all produced below; abdomen broad and oval.....*Xanthandrus* Verrall

   Face broad, either produced forward or perpendicular, not at all receding; abdomen usually narrow.....2

2. Small, entirely black; face extending well forward with a prominent tubercle; arista microscopically pubescent...*Tuberculanostoma* Fluke

   Mostly larger and with yellow markings on abdomen or legs; face less produced; arista usually bare.....3

3. Antennae elongate, the second segment longer than broad, first segment also elongate; legs of male without peculiar hairs or strong bristles.....*Rhysops* Williston

   Antennae shorter, the second segment broader than long, first segment also short.....4

4. Genitalia of male very large with elongate cerci and styles; third segment of antennae round.....*Melanostoma* subgenus *Talahua*, new subgenus

   Genitalia normal in size.....5

5. Face produced forward, rippled or strongly punctate; front tibiae of male with strong black bristles.....*Melanostoma* subgenus *Carposcalis* Enderlein

   Front tibiae of male without strong bristles; face may or may not be produced, seldom punctate.....*Melanostoma* Schiner

It is impossible to draw sharp lines of distinction for all these groups, but I believe they are generally natural. A few others occur where it might be desirable to split off at least subgenera. I refer particularly to *Rhysops lopesi*, new species, with its very elongate antennae and smooth face; to *Melanostoma palliatum*, new species, with its round antennae and reddish pleura; and to *Melanostoma rex*, new species, with its peculiar carinate and produced face. Perhaps *Carposcalis* should not be reduced to subgeneric rank (certainly Enderlein did

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[2] Brown, F. Martin, 1941, A gazetteer of entomological stations in Ecuador. Ann. Ent. Soc. Amer., vol. 34, pp. 809–851.

not intend that it should be), but I am unsure of its status since he used *stegnum* Say as a genotype when he misidentified the species.

*Rhysops* and *Melanostoma* are difficult to separate, so the keys for the species of each should be checked if there is any doubt in identification.

*Xanthandrus*[1] and *Tuberculanostoma*[2] are not treated in this paper as they have already been dealt with by me.

### RHYSOPS WILLISTON

WILLISTON, 1907, Jour. New York Ent. Soc., vol. 15, p. 2.

*Braziliana* CURRAN, 1925, Ann. Mag. Nat. Hist., ser. 9, vol. 16, p. 252; 1937, Amer. Mus. Novitates, no. 926, p. 1.

*Melanostoma*-like flies with elongate antennae, the second segment longer than broad (side view); the first segment elongate, usually as long as, and sometimes much longer than, the third; face often with transverse grooves, lower slopes with a flattened rugose area; legs without peculiar hairs or bristles; scutellum of female usually with two setulose hairs; notopleura generally with a prominent tubercle.

GENOTYPE: *R. rugosonasus* Williston.

The fine hairs on the sides of the face are long enough to be considered pubescence, but because of general usage the term pollen is employed in this paper.

Williston erected *Rhysops* for those species of *Melanostoma* having elongate antennae such as "*scitulum, rugosonasus,* and *melanocerum,* etc." He also included the character of the transverse ridges and depressions on the face which are so characteristic of *rugosonasus*. Later Curran erected *Braziliana* for the species *longicornis*, which does have elongate antennae but lacks definite transverse facial grooves.

If Williston had selected this last-named species as typical of his new genus, his choice would have been better than that of Coquillett, who later picked *rugosonasus* as the genotype, the second named of three species listed. The grooves have great variation, all the way from several, as in the genotype, to one or two or even none, as in *lopesi* described in this paper. The length of the antennae varies also, being decidedly short in the genotype but very elongate in *longicornis* and *lopesi*. I agree with Curran that "the dividing line is not as well marked as one would like to have it." There are several species which are difficult to separate from *Melanostoma* based on the antennal characters; even the one used by Curran, namely, "second segment longer than wide," is sometimes difficult to interpret. This character, however, places the genus on a firmer, although still weak, foundation.

### TABLE OF SPECIES

(The species *melanocera* Williston from Costa Rica is not included.)

1. First antennal segment as long as or longer than the second and third combined.....2
   First segment definitely shorter than the other two combined.....6
2. Face with numerous shallow transverse grooves above the tubercle; wings with two short, narrow, transverse brown bands near the middle on the anterior half (Mexico)..... .....*crenulata* Williston
   Face at most with one groove above the tubercle; wings without transverse bands.....3
3. Sides of face evenly white pubescent; mesonotum highly polished (Brazil) .....*lopesi*, new species
   Sides of face punctate; mesonotum at least partly pollinose, usually vittate .....4
4. Abdomen with two pairs of large triangular, yellow spots (Colombia).. .....*thiemei* Enderlein
   Abdomen with one pair of yellow spots .....5
5. Anterior legs wholly yellowish (Peru) .....*peruviana* Shannon
   Anterior femora black on basal third or more.....(*vittithorax* Hull) *longicornis* Williston
6. Pubescence of face punctate.....7
   Pubescence not punctate.....8
7. Abdomen with oblique oval spots, one pair on the male, two pairs on the female; front femora yellow (Brazil).....*fastigata*, new species

[1] 1937, Amer. Mus. Novitates, no. 941, p. 6.
[2] 1943, Ann. Ent. Soc. Amer., vol. 36, p. 425.

Abdomen with two pairs of large triangular spots covered with gray pollen; front femora brownish on basal half.....*columbiana* Enderlein

8. Face above the tubercle with at least five transverse grooves across the middle; abdominal spots metallic (Mexico).....*rugosonasus* Williston
Face with no more than four and usually with two shallow grooves or less.....9

9. Four front femora black or at least mostly dark brown.....10
Four front femora yellow or orange yellow.....14

10. Hind femora yellow on the basal fourth, the four front femora broadly yellow apically; abdominal spots lineate (Brazil)..*lineata* Fluke
At most only the apex or narrow base yellow on the hind femora.....11

11. Antennae entirely black; small black species with prominent tubercle (Ecuador).....*opaca*, new species
Antennae reddish, at least below on the third segment.....12

12. Front tibiae largely black or brown.13
Front tibiae yellow.....14

13. Abdomen black, the female with yellowish spots on the basal corners of second tergite (Brazil).....
.....*nigrans*, new species
Abdomen with large yellow spots, two pairs on the male, three on the female (Brazil).....
.....*columella*, new species

14. Small species; hind femora yellow with a black apical ring.....15
Larger species (7 to 10 mm.); hind femora at least one-half black, either basally or apically.....16

15. Spots on the third and fourth tergite quadrate; hind tibiae mostly brownish (Dominican Republic)...
.....*quadrimaculata* Hull
Spots on these tergites triangular; hind tibiae mostly yellow (Brazil)..
.....*minuscula*, new species

16. Hind femora black, only the narrow base yellow; yellow spots on the third tergite separated by more than the width of spots.....17
Hind femora at least one-fourth yellow basally.....19

17. Facial pubescence golden and very thick, pile of front yellow; abdomen with three pairs of yellow spots (male) (Ecuador).....
.....*festiva*, new species
Facial pile thinner and more whitish, pile of front black; abdomen with two pairs of yellow spots.....18

18. Front tarsi wholly yellow (Brazil)...
.....*scitula* Williston
Front tarsi dark (Mexico).....
.....*catabomba* Williston

19. Mesonotum reticulate (Brazil).....
.....*lanei* Fluke
Mesonotum pollinose.....20

20. Yellow spots on the abdomen vittate; front of female below ocelli with a complete transverse black fascia (Brazil).....*pollinosa* Hull
Yellow spots on abdomen either triangular or oblique; front of female with two round opaque brown spots
.....21

21. Sides of face lightly punctate and rippled; one pair of oblique discal spots (third tergite) on male, an additional similar pair (second tergite) on female (Brazil).....
.....*fastigata*, new species
Pollen on the sides of the face neither punctate nor rippled; spots on the third and fourth tergites triangular and located on the basal corners (Brazil).....*currani* Fluke

**Rhysops longicornis** (Williston)

Figure 1

*Melanostoma longicornis* Williston, 1888, Trans. Amer. Ent. Soc., vol. 15, p. 263.
*Braziliana vittithorax* Hull, 1937, Jour. Washington Acad. Sci., vol. 27, p. 176.

This species is easily recognized by the punctate face, low tubercle, first segment of antenna equal to the second and third together, and a pair of yellow spots on the third tergite. There are two or three quite faint depressions above the tubercle and the notopleural tubercle is very prominent. Facial pollen white. Length, 7 to 9 mm.

Type from Chapada, Brazil, in the American Museum. Material reviewed:

two of the original types; one male and five females, Nova Teutonia, Brazil, September and October, 1936 and 1937 (Fritz Plaumann); a pair from São Paulo, Brazil, 1939 (Barretta); and a female, Puyo, Oriente, Ecuador, 3000 meters, December, 1938 (F. M. Brown). Curran has recorded it from Colombia.

### **Rhysops fastigata,** new species

Figures 4, 37

Related to *longicornis* Williston and *peruviana* Shannon. Face less punctate; first segment of antennae shorter, a little longer than the third but shorter than the second and third together; four front femora entirely yellow; abdomen with one pair of oblique yellow spots on the male, two on the female. Length, 8 mm.

MALE: Face shining black with coppery reflections along the sides, mid-stripe without pollen; three faint transverse grooves, two just above the tubercle and a third near the antennae; pollen on the sides of the face white, lightly punctate, and with a rather large triangular bare spot above; the facial pollen is also somewhat ripple-like; a heavy white patch next to the eyes which connects narrowly to a brown pollinose spot in the ocular corners of the front; this spot of pollen extends toward the antennae as a fine point and is present in a longitudinal groove. Pile of face and cheeks whitish, of the front black. Occiput heavily pollinose, the cheeks almost bare. Ocellar triangle blue-black, the pile sparse and black. Antennae yellow, dark on the apex and upper half of the third segment; first segment curved, longer than the third, shorter than the second and third together.

Thorax shining greenish black, brownish pollinose anteriorly on the mesonotum and with two dark brown vittae, which begin at the transverse suture and narrow to obscurity about halfway to the scutellum; pile of the mesonotum yellow. Pleura mostly shining, pollinose on the mesopleura and hypopleura, the pile long, yellow with black tips, the underhanging hairs long.

Legs yellow; black on the apical two-thirds of the hind femora, all the hind tibiae, and the apical two or three segments of the tarsi; the pile yellow on the four front femora and tibiae and on the basal and outer sides of the hind femora, the rest black.

Wings hyaline, faint clouds at the cross veins; the stigma yellow; squamae black, the basal corner yellow; plumule white; halteres orange yellow.

Abdomen opaque black, shining along the sides and on the fourth and following tergites, the pile yellow along the sides; a pair of oblique yellow spots on the third tergite which reach from the base to the apical third.

FEMALE: Front with two spots of brown pollen just below the shining blue ocellar triangle; between the two spots is a narrow brown pollinose streak reaching to the shining arc above the antennae. Mesonotum with three brown vittae, the two on the sides reaching almost to the scutellum and the median one very slender and reaching from the fore to the rear margin. Abdomen with two pairs of spots, an additional isolated one on the second tergite, more slender than those on the third tergite. Squamae not so dark, only the narrow edge black.

TYPE MATERIAL: Holotype, male, Nova Teutonia, Brazil, July 4, 1937 (Fritz Plaumann). Allotype, female, same locality, October 17, 1936.

The color of the legs suggests that this species is the same as *peruviana* Shannon, which I have not seen. The antennae, however, are not so long as described by Shannon, and the wings are not entirely brownish; only the cross veins are clouded.

### **Rhysops peruviana** (Shannon)

*Braziliana peruviana* SHANNON, 1927, Proc. U. S. Natl. Mus., vol. 70, p. 7.

This species has not been seen by me. It was described from a single male, which is undoubtedly closely related to *longicornis* Williston, differing principally in the color of the front legs, which are all yellow except the tarsi. The wings are also entirely brownish. The first segment of the antennae is stated to be more than four times as long as broad, which is my understanding of the length of the antennae of *longicornis*. The first segment of the an-

tennae of *fastigata*, new species, very closely related to *peruviana*, is no more than three times as long as broad even if measured by the longer under side.

### Rhysops thiemei (Enderlein)

*Braziliana thiemei* ENDERLEIN, 1937, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 201.

This species is related to *longicornis* Williston, having a punctate face and long antennae, the first segment five times as long as wide. Apparently it differs from *longicornis* only in the presence of two pairs of yellow abdominal spots. The antennae are brownish yellow, the third segment brown. The front of the female has two large, dull, velvety black, round spots, which are united behind by a dull gray black band. The legs are golden yellowish, hind tibiae and apex of hind femora (on the male second and third pairs) one-third brown; in this respect it resembles *peruviana* Shannon. It was described from two males and three females from Colombia. I have not been able to recognize it among my specimens.

### Rhysops columbiana (Enderlein)

*Braziliana columbiana* ENDERLEIN, 1937, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 202.

I have been unable to recognize this species from Enderlein's brief description. It is related to *longicornis*, a species with punctate spots on the sides of the face, but the antennae are shorter; the first and third segments apparently of about equal length, being three to three and one-half times as long as broad. The front femora brownish on the basal half, the mid-femora all brown except the tip, and the hind femora dark brown except the basal sixth. There are two pairs of large yellow spots on the abdomen which are covered with gray pollen, and in this respect they differ from *fastigata*, new species. The front femora of the latter species are also entirely yellow, brown on the basal half of *columbiana*.

### Rhysops catabomba (Williston)

Figure 2

*Melanostoma catabombum* WILLISTON, 1891, Biologia Centrali-Americana, Insecta, Diptera, vol. 3, p. 12.

First segment of the antennae about the same length as the third; face without distinct grooves, only two very shallow and wide depressions; dorsum of thorax brown pollinose; abdomen of male with two pairs of oval yellow spots. Length, 10 mm.

MALE: Pollen of the face whitish to yellowish, thinner down the middle of the sides, the mid-stripe broad and shining, pile dark on the sides near the antennae becoming paler below; oral edge shining. Front with yellowish to brownish pollen, with a rather deep shining arc just above the widely separated antennae, pile black. Antennae yellow to reddish, the third segment brown above and on the apical half. Ocellar and upper occipital pile blackish.

Thorax bronze, considerably shining but with brown pollen, pile yellow to light brown.

Legs yellow to reddish, the middle femora darkened on the basal half, the hind tibiae and hind femora and all the tarsi reddish brown to brown, hind metatarsi yellow.

Wings dilutely reddish, darker towards the tip; squamae yellow, the edge and fringe brown; halteres yellow.

Abdomen black, shining along the sides, widest at the apex of the third segment; with a pair of basal oblique yellow oval spots on the third and fourth tergites. These spots are widely separated but in the specimen before me do not reach quite to the sides. Pile of the abdomen yellowish brown.

A male specimen was studied from the material on which the original description was based, collected at Guerrero, Mexico, 7000 feet, by H. H. Smith. I have not seen the female.

### Rhysops crenulata (Williston)

Figure 3

*Melanostoma crenulatum* WILLISTON, 1891, Biologia Centrali-Americana, Insecta, Diptera, vol. 3, p. 12.

First segment of the antennae longer than the last two combined; face with seven or eight shallow transverse depressions. Length, 7 to 8 mm.

FEMALE: Face highly polished, the pollen white and confined to a narrow stripe

on each side from the antennae to close to the oral margin, connecting by a broader stripe to the eye and thence along the eye to a triangle opposite the lowest depression of the face, then connecting with the white triangles on the lower front; pile of the face short and white. Front brownish opaque below the ocellar triangle and above the depression, bordered above by a very narrow whitish pollinose band; white pollinose band across depression not interrupted, the ground color bluish. Ocellar and frontal pile short, black. Upper occiput shining blue-black, lower occiput heavily coated with white pollen and pile.

All the femora black, their apices yellow; four front tibiae yellow, the posterior pair dark with the basal third yellow; tarsi yellow, apical three segments darkened. Anterior cross vein clouded, also smaller clouds at other cross veins.

I have had the privilege of studying two females of the original lot from Mexico, collected by H. H. Smith. Williston's description mentions only three or four transverse depressions on the face, but the females I have seen easily show seven or eight depressions, stronger in one specimen than in the other. I know of no other species that *crenulata* might be confused with except possibly *melanocera*. I have not seen this latter species but Williston's description is quite distinct in regard to the antennae, "third joint oval, about as long as the first two joints together."

### **Rhysops lopesi,** new species

Figure 5

Antennae elongate, the first segment nearly four times as long as the second and about twice as long as the third. Face with a low tubercle and with no prominent depressions above, pile and pollen white. Mesonotum shining black without pollen. Length, 7 to 8 mm.

FEMALE: Head shining black with white pile except for some brownish hairs on the upper half of the front. Face with a very low elongate tubercle, only slightly concave below the antennae, with no distinct transverse depressions, although there are two very faint depressed lines immediately above the tubercle. Face entirely covered with white pollen except for a median vitta, which is broadest over the tubercle; oral tips somewhat produced below; a shining area between the eyes and oral tips; cheeks heavily coated with white pollen and white pile. Front highly polished with coppery reflections, extremely wide, the ocelli on a slightly raised triangle, the pile white below, more brownish in a wide band across the vertex; brown pile also appears on the rather wide upper part of the occiput, the rest of the occiput with white pollen and pile. Antennae inserted on a raised base, the first segment extremely long, yellowish in color with black pile; second segment dark brown, about one-fourth as long as the first; the third black and about one-half as long as the first; arista thick, about as long as the third segment, yellow at the base and dark on the apical third. On each side of the tubercle is a large, rectangular, flat, slightly rugose area, although the wrinkles show only on the upper edge.

Thorax shining, with the mesonotum highly polished and with fine short white pile; the scutellum also highly polished, but with two rugose depressions near the tip, the pile entirely white. Pleura with a slightly bluish cast, covered with white pollen and rather long white pile. Notopleura with only a slight indication of a tubercle.

Legs yellow, the femora and a broad ring on the hind tibiae reddish brown; pile everywhere yellow, except a few black hairs dorsally on the last three segments of the hind tarsi.

Wings hyaline, stigma diluted yellow. Squamae yellow with white fringe, plumule white, halteres yellowish white, the stalks slightly darker.

Abdomen everywhere polished with dark brown to black reflections, no evidence of yellow spots anywhere, the pile all white except for some darker hairs down the middle of the fourth tergite.

TYPE MATERIAL: Holotype, female, S. Jose dos Campos, Brazil, X-933 [this probably refers to the date October 9, 1933], (H. S. Lopes). Paratype: female, same data.

### Rhysops rugosonasus (Williston)

Figure 6

*Melanostoma rugosonasus* WILLISTON, 1891, Biologia Centrali-Americana, Insecta, Diptera, vol. 3, p. 3.

*Rhysops rugonasus* WILLISTON, 1907, Jour. New York Ent. Soc., vol. 15, p. 2.

*Rhysops rugonasus* COQUILLETT, 1910, Proc. U. S. Natl. Mus., vol. 37, p. 13.

MALE: A dark species with a flat face, which has about six or seven ridges separated by shallow depressions; a large oval median vitta is shining, but the rest of the face is whitish pollinose. Antennae with the first and second segments together a little longer than the third. The notopleural tubercle very prominent. Abdomen elongate, opaque black, more shining along the sides and broadly on the anterior corners of the third and fourth tergites. There are no peculiar hairs on the legs, although the pile is quite long on the outer sides of the femora, and there are about one-half dozen longer hairs on the outer sides of the hind tibiae.

The female is quite similar except that the pile of the legs is much briefer, with very few long hairs on the femora and none on the tibiae. Length, 10 to 11 mm.

Williston mentions only five well-marked transverse grooves. In examining 10 specimens from Mexico City, I have found that the number of depressions vary, but there are usually six or seven. The depressions extend almost to the base of the antennae.

The original spelling of this species is *rugosonasus*. Williston misspelled it *rugonasus* when erecting the genus *Rhysops*, and it has often been used thus since.

Type from Mexico. Specimens reviewed: nine males and one female, Mexico City, 10,000 feet, July, 1936 (H. G. Meyer).

### Rhysops lineata (Fluke)

Figure 7

*Melanostoma lineata* FLUKE, 1937, Amer. Mus. Novitates, no. 941, p. 9.

A shining black to aeneous species with relatively short antennae, two faint depressions above the tubercle, highly polished mesonotum with two faint vittae anteriorly, and linear yellow vittae on the abdomen. There is an error in the original description regarding the antennae; it should read "first segment only very little longer than the second, which is longer than wide."

Type from Nova Teutonia, Brazil, in the American Museum.

### Rhysops scitula (Williston)

Figures 43, 54

*Melanostoma scitulum* WILLISTON, 1888, Trans. Amer. Ent. Soc., vol. 15, p. 264.

"MALE: Length 7 mm. Allied to *M. longicornis*. Antennae less elongate, the three joints of nearly equal length, the third not twice as long as wide. Face on the sides with a slender stripe and spot of pollen, not punctulate. Abdomen narrow, of nearly equal width throughout; fourth segment also with two yellow strigulae. Four front tarsi wholly yellow. Wings hyaline, an elongate stigmatic spot and narrow clouds on the cross-veins brown.

"Two specimens, Chapada."

I have been unable to recognize this species among the numerous specimens recently received from southern Brazil, although one of the type specimens, a male, is before me, but it is headless and appears somewhat teneral. The clouding of the anterior cross vein (r-m) is quite characteristic, but it is not entirely reliable as other species often have a slight browning along this vein. The four front femora appear only pale brown on the basal half but may be quite dark on fully matured specimens.

Mesonotum mostly shining, with two faint whitish pollinose vittae on the anterior half, the pile of the thorax entirely pale. The four front tibiae and tarsi and the hind metatarsi are yellow; the hind tibiae and femora are mostly dark brown, yellow at the knees, and narrowly yellow at the base of the femora.

Abdomen with a basal pair of elongate yellow spots on the third tergite reaching the apical third, a similar smaller pair on the fourth tergite separated from the base of the tergite and occupying one-half its length.

Williston compares his *crenulata* with *scitula*, remarking that the facial grooves are quite similar.

**Rhysops nigrans,** new species

Figure 8

Face perpendicular without prominent grooves above the tubercle, femora and tarsi black, abdomen black with small yellow to red spots on the basal corners of the second tergite. Length, 8 to 9 mm.

FEMALE: Face nearly straight, the tubercle low with two very faint transverse depressions above; white pollinose, shining on a broad mid-stripe, around the oral edges, a narrow band above the cheeks from the eyes to the oral edge, an arc above the antennae, and thinly pollinose from the antennae down the slopes of the face almost to the flat area opposite the tubercle; the pile white. Front dark with a broad opaque band just below the ocelli, gradually fading into white pollen in the depression, the pile black. Ocellar triangle semi-shining black with black pile, occiput whitish pollinose and white pilose on lower two-thirds, black pilose on upper third. Antennae reaching to the tubercle, the first segment shorter than the third, the third a little shorter than the first two together, reddish yellow but darker on the outer sides and above on the third segment.

Thorax black, the mesonotum semi-opaque on the disc, more shining along the sides, two median white pollinose vittae on the anterior half, the pile whitish and very short, dark brown along the sides beyond the suture; pleura lightly white pollinose, the pile all white. Notopleural tubercle prominent. Scutellum blue-black, shining, slightly rugose, the pile short and pale with two long black hairs at the apex; the fringe thin and white.

Legs dark brown to black, the basal one-third of the tibiae and the apex of the femora reddish yellow, pile all black, even the mat under the hind metatarsi.

Wings tinged with brown, the stigma elongate brown, very light clouds at the fork of the second and third veins and on the anterior cross vein. Squamae yellowish, the border and fringe brown; plumule white; halteres yellow.

Abdomen semi-shining black, yellowish red triangles in the basal corners of second tergite reaching over the sides and half the length of the segment.

MALE: Very similar, the pollen of the frontal triangle whitish along the eyes, brownish elsewhere; the pile of the mesonotum longer and brownish yellow; pile of the scutellum longer and more yellowish, blackish on the rim. Abdomen more opaque and without definite yellow spots, pile longer along the sides, short, black, and appressed on the discs of the tergites.

TYPE MATERIAL: Holotype, female, Nova Teutonia, Brazil, July 1, 1936 (Fritz Plaumann). Allotype, male, same locality, July 20, 1937. Paratypes: 10 females, same locality, June and July, 1936 and 1937; one male, Santa Catharina, Brazil, January 21, 1929.

**Rhysops columella,** new species

Figures 9, 39, 40

Closely related to *nigrans*, differs in its slightly larger size, more wrinkled face, and prominent yellow markings on the abdomen. Length, 10 to 11 mm.

MALE: Head shining black, the slopes of the face whitish pollinose, which thins out down the middle from the antennae to the flattened rugose area opposite the tubercle; three or four faint depressions above the tubercle, the pile black on the sides. Front more brownish pollinose except for the highly roughened arc above the antennae, pile black. Ocellar triangle black with black pile, occipital pile black above, yellow below.

Mesonotum from a top view semi-shining aeneous, viewed from behind with two whitish vittae on the anterior half, viewed from the side brownish pollinose; the pile brownish. Pleura shining black with a light coating of white to brownish pollen, the pile yellowish; mesopleura with brownish metallic reflections. Scutellum shining, slightly rugose on the apical half, the pile long and yellow, fringe long and yellow.

Legs reddish brown to black, the four front tibiae yellowish on the basal fourth to third, no sharp demarcation; pile inconspicuous, mostly black.

Wings brownish hyaline, the stigma brown. Squamae brownish yellow, plumule white, halteres yellow.

Abdomen black; first tergite shining; second opaque with a pair of slender yel-

low vittae on the sides free from the base and reaching the apical sixth; third opaque black in the middle but with a pair of large, nearly rectangular, yellow spots, free from the shiny sides and reaching the apical third of the segment, the apical ends of the spots rounded, basal ends widen before reaching the base; fourth tergite with similar but smaller spots, the segment nearly all shining; fifth tergite shining; genitalia shining black with black pile. Pile of the sides longer and more yellowish anteriorly.

FEMALE: Facial grooves four in number and definite, pile of the face white. Front with a broad opaque black fascia just below the ocelli, the depression whitish pollinose, pile black.

Pile of the thorax very short, the scutellum with two apical setulose hairs. Abdominal spots narrower and more isolated than on the male, those on the second tergite wider, those on the fourth tergite reaching only halfway.

TYPE MATERIAL: Holotype, male, Nova Teutonia, Brazil, June 10, 1937 (Fritz Plaumann). Allotype, female, Nova Friburgo, E. Dorio, Brazil, April 4, 1937 (H. S. Lopes). Paratypes: male, October 10, 1936, and female, July 6, 1936, same locality as holotype; male, São Vicente, Brazil, April 22, 1934; female, same data as allotype.

I believe these females belong with the males. There is some variation in ground color on the females (one with blue reflections on the head and scutellum) and in the extent of the maculation of the abdomen of both sexes.

### Rhysops currani Fluke

Figure 10

FLUKE, 1937, Amer. Mus. Novitates, no. 941, p. 8.

Face with three faint transverse depressions; first segment of antennae longer than the second but shorter than the third, the third shorter than the first two combined. The shining mid-stripe of the face bisected above by a median dash of pollen which reaches to the middle depression. The legs are mostly yellow, the four front tibiae and femora yellow, but with a darker apical smudge on the outside of the mid-femora on the male; basal half of the hind femora yellow, the apical half except tip shining black. Yellow triangular spots on the basal corners of third and fourth tergites. Length, 9 mm.

Types from southern Brazil.

### Rhysops quadrimaculata Hull

Figures 12, 41

HULL, 1944, Psyche, vol. 51, p. 28.

Very similar to *currani* Fluke, but the abdominal spots are quadrate instead of triangular. In addition, there is an extension of the rugose area on the sides of the face opposite the two middle depressions as well as opposite the tubercle. Pollen of face in narrow bands, from antennae to oral edge, with another fork going to eyes and meeting first band broadly on the lower rugose area, upper rugose area bare of pollen. First segment of the antennae very little shorter than the third.

Legs yellow; the hind tibiae obscurely dark except the indefinite base, the apical third or little more of the hind femora, the hind metatarsi and the apical third or a little more of the hind femora, the hind metatarsi and the two or three apical segments of the other tarsi dark brown.

Abdomen mostly opaque black, more shining on the sides with a pair of quadrate yellow spots in the basal outside corners of third and fourth tergites, slightly wider on the outside and reaching nearly to the apical half.

This description made from a paratype, male, Loma Vieja, S. Constanza, Dominican Republic, 6000 feet, August, 1938.

### Rhysops pollinosa Hull

Figure 11

HULL, 1942, Jour. Kansas Ent. Soc., vol. 15, p. 10.

Characterized by the lineate spots on the abdomen, four faint transverse grooves on the face, yellow to orange anterior femora and brownish pollinose mesonotum with the usual two yellowish median vittae on the anterior half. The antennae on the holotype (female) are missing. Since it appears to be related to *lineata* Fluke, differing principally in the color of the legs,

the antennae will probably be found to be quite similar. Length, 9 mm.

Known only by the holotype, female, collected at São Paulo, Brazil, November, 1940 (J. Lane). Through the courtesy of Dr. Hull I have had the privilege of studying this specimen.

### **Rhysops lanei** (Fluke)

Figure 14

*Melanostoma lanei* FLUKE, 1936, Jour. Kansas Ent. Soc., vol. 9, p. 61.

*Rhysops lachrymellea* HULL, 1942, Jour. Kansas Ent. Soc., vol. 15, p. 10.

A small species with a low tubercle, one depression above the tubercle, the first and third segments of the antennae subequal, the second segment a little more than half as long as the third; mesonotum bronze reticulate with brown vittae; the abdomen with three or four pairs of prominent yellow spots.

Type from São Paulo, Brazil, in the American Museum. Two additional females from Nova Teutonia, Brazil, 1937 (Fritz Plaumann). Through the courtesy of Dr. Hull I have studied the type of *lachrymellea.*

### **Rhysops festiva,** new species

Figures 13, 42

Similar to *lanei* Fluke, but the markings on the abdomen are more vittate. Length, 8.5 mm.

MALE: Head heavily golden pollinose, a shining area just above the antennae, down the middle of the face with the upper part forked by a broad dash of pollen, which reaches to the base of the very low but elongate tubercle, also a shining area from the eyes to the oral angles; pile everywhere yellow except for a few black hairs near the front ocellus. Antennae relatively short, the first and third segments subequal, the second a little more than half as long as the third; arista yellow, the apical third dark.

Thorax: Mesonotum bronze reticulate, rather heavily coated with yellowish pollen, with three dark brown vittae, the median one slender; scutellum aeneous, the disc slightly rugose, the apex with two longer pale hairs; pleura yellowish pollinose; pile everywhere yellow.

Legs yellowish red to brown; the hind femora except the narrow base and tip, the hind tibiae and the apical four tarsal segments darker but almost black on the femora; pile of the legs mostly yellowish, black on the hind tibiae and upper sides of all the tarsi.

Wings hyaline, the stigma brown. Squamae dark brown, the fringe yellowish; plumule yellow; halteres yellow.

Abdomen opaque black, the sides shining; with three pairs of yellow spots; first pair on the second tergite reaching from the basal corners along the sides to the apical fifth; the second pair on the third tergite reaching from the base to the apical fourth; those on the fourth tergite reaching to the apical third. Pile mostly all yellow.

TYPE MATERIAL: Holotype, male, Baños, Ecuador, 1800 meters, July 4, 1938 (W. C. Macintyre).

### **Rhysops opaca,** new species

Figure 15

A small, entirely black species, only the bases of the tibiae reddish. Face perpendicular with a prominent tubercle. Length, 5 to 6.5 mm.

MALE: Head shining black, the sides of the face front and cheeks lightly dusted with white pollen; pile of the face and cheeks white, of the front black. Face nearly perpendicular with a large, well-rounded tubercle, deeply concave above tubercle. Ocellar triangle shining black, with black pile in front and brownish pile near occiput; cilia black, occipital pile yellow below. Antennae black, first segment longer than the second, shorter than the third, which is shorter than first two combined; arista black.

Thorax black; the mesonotum shining with two faint brownish pollinose vittae on the anterior half, pile long and brownish yellow; pile of the pleura shorter and whitish. Scutellum shining with the apical half rugose, pile mixed with short and long yellowish hairs, fringe short and yellow.

Legs black, basal one-fourth to one-third of the tibiae and the extreme apex of the femora reddish, but there is no sharp de-

marcation of the colors; pile sparse and pale.

Wings hyaline, the stigma yellowish brown. Squamae black, plumule yellow, halteres black with reddish stalks.

Abdomen opaque black, shining area along the sides somewhat resembling elongate side spots; pile long and yellow on the sides, very short, black and appressed on the discs.

FEMALE: On each side of the ocellar triangle a shining spot devoid of pollen and pile; frontal pile black with a few pale hairs in the triangular side dust spots. Mesonotal pile shorter and paler; in front of the scutellum brownish pollen can be observed in certain lights. Two pale setulose hairs on the rim of the scutellum. Legs sometimes somewhat more extensively red.

TYPE MATERIAL: Holotype, male, Urbina, Cerro Chimborazo, Ecuador, 3650 meters, April 18, 1939 (F. M. and H. Brown). Allotype, female, same data. Paratypes: seven males and 15 females, same data.

**Rhysops minuscula,** new species

Figures 16, 17, 47

A small species with a low tubercle and two shallow depressions above; antennae with the first and third segments about equal in length; abdomen with two pairs of yellow spots, which are often absent in the female. Length, 5.5 to 6 mm.

MALE: Face very highly polished blue-black; the tubercle low and with two faint transverse depressions, one immediately above the tubercle and the other about one-third the distance from the tubercle to the antennae; the median stripe is highly polished with a narrow gray pollinose vitta, which reaches from the base of the antennae almost to the first depression; this pollinose vitta connects with a narrow vitta, which follows down the sides of the face to the oral margin and connects with a broad patch of pollen, which in turn connects to a narrow strip along the eyes, broadening on the front with a narrow point projecting toward the antennae, but not quite reaching them; the pollen of the front is brownish black but bordered with gray pollen in front. Pile of the front and sides of the face black, whitish on the cheeks and the lower occiput. On each side of the face between the tubercle and the eyes is a flattened rugose patch which has about three ridges on the upper half of the patch. Ocellar triangle dark brown with coppery reflections; the pile all black; the cilia black. Antennae a little more than half as long as the face; the first and third segments about equal in length; the second about half as long as the first or third; segments yellow, the third black above and at the apex; arista yellow, basal segments and the tip darker.

Mesonotum dark brown to black with two faint brownish pollinose vittae on the anterior half. Pile of mesonotum is dark brown to black with paler hairs on the disc. On the notopleura there is a very prominent tubercle, which is located near the transverse suture. Scutellum highly polished with a greenish black hue, the pile light brown in color; on the rims two slightly longer hairs, which are well separated but approach the apex; the disc of the scutellum with about five faint transverse depressions. Pleura shining, very lightly pollinose especially around the propleura; the pile all yellowish brown.

Legs yellow, with a prominent black ring at the apex of the hind tibiae; the apical three segments of the tarsi brownish; the pile yellowish to dark brown with few black hairs appearing on the outer sides of the femora and tibiae; the tiny bristles under the mid-tarsi are somewhat brownish in color.

Wings hyaline, the stigma light brownish; squamae black, with black fringe; plumule light brown; halteres yellowish red.

Abdomen somewhat spatulate, opaque black but shining along the sides; with two pairs of yellow spots located in the anterior corners of the third and fourth tergites; pile yellowish and rather elongate along the sides of the second segment. The venter polished, the incisure between the second and third sternites yellow. Genitalia polished black, with black pile.

FEMALE: The pollen on the face is

whitish, as is also the pile; the front is wide with two large dark brown pollinose spots, which are narrowly connected and are located in front of the ocelli; a narrow band of white pollen separates the dark spots from the ocelli, and a narrow brown vitta runs from the median ocellus to the highly polished lunule. Mesonotum more shining blackish, with the vittae bluish in color and the pile all white. The abdomen is more oval, semi-shining on the disc, highly polished along the sides; the yellow spots often obscured.

TYPE MATERIAL: Holotype, male, Nova Teutonia, Brazil, June 8, 1937 (Fritz Plaumann). Allotype, female, same locality, June 2, 1937. Paratypes: 11 males, same locality, June 3 to September 1, 1937 and 1938; 15 females, same locality, June to October 24, 1937 and 1938.

### MELANOSTOMA SCHINER

Narrow, dark flies; the antennae short, the first and second segments nearly equal in length, the second wider than long. Face may be perpendicular or protruding but very little produced downward, often with rippled or punctate spots in the pollen (subgenus *Carposcalis*). Legs normal in shape, although the front tibiae of the male may have strong bristles and the hind metatarsi may be somewhat enlarged. Abdomen usually narrow, although in the female often more oval; maculation usually present as pairs of yellow or reddish spots, sometimes absent or metallic but normally with white or brownish pollen. Genitalia usually small but sometimes large (subgenus *Talahua*).

Most of the species of this genus found in the Neotropical region have a heavy coating of pollen on the slopes of the face, which is also pilose, with a bare shining mid-stripe; the tubercle small to very large; a flattened area, which is slightly rugose, is present on the slopes of the face opposite the tubercle on virtually all species. The majority of the species also have a pair of whitish pollinose vittae on the anterior half of the mesonotum. Most of these characteristics, including a tubercle on the notopleura, are also common on species of *Rhysops*, and the only way to tell the two genera apart is by the length of the antennae.

There is a species occurring in Mexico which resembles the form *trichopus* Thomson, which is so common in California, but I am unable to determine its status so it is not included. It belongs to the *punctulatum* (*Carposcalis*) group but the pollen of the face is rippled; the bristles on the front tibiae of the male are weak and only four or five toward the apex.

### TABLE OF SPECIES

(The species *annuliferum* Bigot, *bellum* Giglio-Tos, *limbatum* Enderlein, and *columbianum* Enderlein are not included.)

1. Antennae entirely black.....2
   Antennae partly yellow, at least below on the third segment.....4
2. Face punctate..*fenestratum* Macquart
   Facial pollen non-punctate.....3
3. Face produced, carinate above the the tubercle, large species (11 mm.) .....*rex*, new species
   Face neither produced nor carinate, small species (7 mm.)..... .....*pictipes* Bigot var. (melanic)
4. Third segment of the antennae very large, round, more than twice as wide as the first segment.....5
   Third segment narrow, elongate, the upper edge nearly straight, not more than twice as wide as the first segment.....6
5. Pleura reddish, third segment of antennae circular..... .....*palliatum*, new species
   Pleura black, third segment of antennae slightly oval, large species (11 to 12 mm.)..... *M.* (*Talahua*) *fervidum*, new species
6. Four front femora and tibiae yellow.7
   Four front femora black or brown, at least on the basal fourth.....10
7. Face above the tubercle carinate, elongate species..... .....*browni*, new species
   Face transversely rounded, not carinate.....8
8. Pollen of face punctate..... .....*chalconotum* Philippi
   Pollen of face non-punctate, smooth.9

9. Hind femora reddish or yellowish on the basal half....*tropicum* Curran
Hind femora black, only very narrowly yellow at the base.....
.....*luculentum*, new species
10. Pollen of face finely rippled or clearly punctate, the oral margin usually jutting well forward.....11
Pollen of face smooth or mostly absent.....21
11. Males (eyes holoptic).....12
Females (eyes dichoptic).....17
12. Spines on front tibiae nearly straight, at most only gently curved.....13
Spines on the front tibiae strongly curved outward at the middle...15
13. Front tibiae with eight or nine strong spines, facial pollen very little punctate, abdominal spots reddish.....
.....*ecuadoriensis*, new species
Front tibiae with four or five long spines, although there may be several shorter ones basally, facial pollen with many round punctate spots, abdominal spots metallic..14
14. Tubercle only shining...*stegnum* Say
Facial stripe reaches about halfway to the base of the antennae.....
.....*chaetopoda* Davidson
15. Front tibiae with at least 12 outwardly curved spines.....
.....*fenestratum* Macquart
Front tibiae with five to eight such spines.....16
16. Front tibiae with six to eight spines..
.....*punctulatum* Wulp
Front tibiae with five spines.....
.....*saltanum* Enderlein
17. Front femora black on the basal half or more, face with large punctate spots.....18
Front femora black on the basal third; face rippled, at most only finely punctate.....20
18. Face with a median shining stripe..19
Only the tubercle shining.....
.....*stegnum* Say
19. Facial pollen clearly round, punctate, not rippled; oral margin greatly produced.....*punctulatum* Wulp
Facial pollen more rippled than punctate, oral margin less produced
.....*chaetopoda* Davidson
20. Front wide, ocellar triangle one-third of the width at vertex; face more protruding.....
.....*ecuadoriensis*, new species
Front narrower, ocellar triangle more than one-third of the width; face less protruding.....
.....*fenestratum* Macquart
21. Legs entirely black, scutellum with 10 to 12 long black bristles on the margin, blue-black species.....
.....*scutigerum*, new species
Legs partly yellow or orange colored, at least the four front tibiae largely yellowish.....22
22. Face jutting well forward into a cone, the tubercle almost absent; pollen of face sparse, whitish (Mexico)...
.....*meyeri*, new species
Face nearly perpendicular, tubercle very evident.....23
23. Small species (6 to 7 mm.), abdomen shining black (female).....
.....*pictipes* Bigot var. (melanic)
Larger species (7 mm. or more), abdomen with yellow spots.....24
24. Pollen of face white; front large and inflated....*inflatifrons*, new species
Pollen of face yellow; front not inflated.....25
25. Face nearly perpendicular, with four transverse depressions above the tubercle.....*neotropicum* Curran
Face more prominent, without depressions.....26
26. Yellow spots on the third tergite of the abdomen almost as wide as long, quadrate; pile on the slopes of the face mostly black (male); on the female the spots are triangular....
.....*altissimum*, new species
Yellow spots of the third tergite more slender, about two and one-half times as long as wide; pile of the face mostly yellowish except near antennae; abdomen of female generally black, at most with small reddish spots.....
.....*bolivariensis*, new species

**Melanostoma pictipes** Bigot

BIGOT, 1885, Ann. Soc. Ent. France, ser. 6, vol. 4, p. 78.

I have before me several females from Mexico City, 10,000 feet (H. G. Meyer), which have the abdomen entirely black and the legs also mostly black. For several years these were identified as *dubium* Zetterstedt, until three males of *dubium* were received from the mountains of Utah which possess a curled hair on the front femora. I, therefore, believe they are melanic forms of *pictipes* Bigot. The thin white pollen is evenly distributed over the slopes of the face, and there is a very small rugose area next to the eyes and just above the facial slits. The males I possess from Utah are mostly black pilose on the mesonotum.

### Melanostoma (Carposcalis) stegnum (Say)

Figures 18, 55

*Syrphus stegnum* SAY, 1829, Jour. Acad. Nat. Sci. Philadelphia, vol. 6, p. 163.

This is the genotype of *Carposcalis* as designated by Enderlein, based on the enlarged hind metatarsi, the curved spines on the front tibiae, the punctate face, and the enlarged facets of the compound eyes.

The face is strongly punctate, similar to *punctulatum* but less produced, and only the tubercle is shining. The front tibia has four or five long straight spines on the apical half and 10 or 12 much shorter ones on the basal half. The femora are black, only their apices yellow. The mesonotum of the female is brilliantly shining with a bluish cast.

I have no authentic records of this species south of the California line. I believe that most of the Mexican forms will be found to be *chaetopoda* Davidson, and Enderlein's South American reports certainly refer to *punctulatum* or *fenestratum*.

### Melanostoma (Carposcalis) chaetopoda Davidson

Figures 19, 56

DAVIDSON, 1922, Trans. Amer. Ent. Soc., vol. 48, p. 35 (California).

There should be no trouble distinguishing this species from its near relatives; the stripe of the face covers more than the tubercle but does not quite reach the antennae; face more perpendicular than *stegnum* and *punctulatum*. The front tibiae have six stout bristles that curve gently outward and the mid-tibiae have four, more slender but longer black bristles.

Eight males and two females from near Mexico City, Mexico, 10,000 feet, July, 1936 (H. G. Meyer).

### Melanostoma (Carposcalis) punctulatum Wulp

Figures 20, 58

WULP, 1888, Tijdschr. Ent., vol. 31, p. 375.

Front tibiae of male with six to eight outwardly projecting spines; face of both sexes with large round punctate spots. Length, 7 to 8 mm.

MALE: Face protruding forward and a little downward, the pollen white and punctate, ending abruptly opposite the antennae, the pile black above but white on the lower slopes. Front with bronze reflections and long black pile. Ocellar pile black, upper cilia on the occiput long, black and yellow mixed; shorter and white below. First two segments of antennae together as long as the third; black, reddish below on the third segment.

Mesonotum semi-shining along the sides, the middle brownish pollinose; the pile yellow, black along the sides. Pleura white pollinose and yellowish pilose. Scutellum with long black or brownish pile, sometimes mostly brownish yellow, the fringe yellowish.

Legs black, the tibiae reddish to yellowish, the femora reddish on the apical one-third to one-half, narrowly on the hind femora. Front tibiae with six to eight strong spines on the outer side, the middle tibiae with four long black hairs.

Wings hyaline, the stigma yellow. Squamae dark brown, halteres brown, plumule white.

Abdomen opaque black, more shining apically and along the sides; the third and fourth tergites each with a pair of basal bronze-like spots covered with white pollen, visible in certain lights.

FEMALE: Quite similar. Pile of the mesonotum shorter and all yellow, ground color shining black with a slight bronze tint. Pile of scutellum yellow. Front femora normally all black except the apical third.

Bronze spots on the third and fourth tergites occupy more than half the length of the segments.

Described from 35 males and 18 females from Ecuador, all at high altitudes—2100 to 3300 meters (F. M. and H. Brown); one male from São Paulo, Brazil (H. S. Lopes); and one female from Victoria, Chile.

The outwardly curved spines (average seven in number) on the front tibiae, the punctate face, and the bronze spots will help to distinguish this species from its near relatives. The females of *ecuadoriensis* are very similar, but they have paler front femora, the punctate spots are smaller and less evident, and the face is more protruding. The females of *fenestratum* are also similar, but the facial pubescence is very finely punctate, and the front femora are also paler.

### Melanostoma (Carposcalis) fenestratum (Macquart)

Figures 21, 57

*Syrphus fenestratus* MACQUART, 1842, Diptères exotiques nouveaux ou peu connus, vol. 2, pt. 2, p. 103.

The male is readily recognized by the long row of black bristles the entire length of the front tibiae, 12 or 14 in number and all but the apical two or three strongly curved outward at the middle. Face punctation very fine and more ripple-like; on the females before me the punctation is more evident. The four front femora are mostly yellow, black on the basal third or fourth; mesonotum rather brilliant with bluish cast. The abdominal spots are metallic, sometimes with red showing, but are covered with white pollen.

Two males and one female from Chile, one female from Rio de Janeiro, Brazil, and one female from Miramar, which I believe is a coastal village or province of southern Argentina.

### Melanostoma (Carposcalis) saltanum Enderlein

*Carposcalis saltana* ENDERLEIN, 1937, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 200.

Enderlein compared this species with *stegnum* Say. His reference to five curved spines on the front tibiae and "bei *C. stegna* (Say, 1829) deren etwa 8" indicates clearly that he had *punctulatum* Wulp before him and had never seen the true *stegnum* Say of North America. His *saltanum* was taken in northern Argentina and is a very small species, only 5.5 mm. long.

I have a single small specimen taken at 4200 meters from Ecuador that might be this species, but the legs are much darker than those described for *saltanum*. This specimen has five curved spines on the front tibiae. The face protrudes considerably; the pollen is whitish and very little punctate; abdomen with two pairs of semi-quadrate brownish pollinose spots.

### Melanostoma (Carposcalis) chalconotum (Philippi)

Figures 22, 23, 38

*Syrphus chalconotus* PHILIPPI, 1865, Verhandl. Zool.-Bot. Gesellsch. Wien, vol. 15, p. 747.

Related to *punctulatum* Wulp. The third segment of the antennae more elongate; the front legs mostly yellowish red; abdomen (female) with four pairs of large reddish spots, which are lightly coated with white pollen, visible in side lights. Scutellum with four to eight black, bristle-like hairs on the margin. Length, 7 to 8 mm.

I place here somewhat doubtfully four females. Enderlein considered this species a variety of *stegnum* under his new genus *Carposcalis*. The punctate face is very typical of *punctulatum* but the paler front legs, more elongate antennae, and large reddish spots on the abdomen will readily separate out *chalconotum*.

I quote here a liberal translation of Philippi's original description: "Vertex, front and facial tubercle dark bronze, the face on the sides white with numerous small circular bronze spots very close together. The first antennal segment dark brown, the last brownish red except the upper third which is dark brown. The body is covered with whitish hair. The thorax, above and below, and the scutellum dark bronze green; the coxae, femora, and tibiae are reddish yellow. From *S. melanostoma* it

differs also through the dark bronze green scutellum and the small size."

Four females: two, Riobamba, Ecuador, 2700 meters, April 19, 1939 (F. M. and H. Brown); one, Cuenca, Azuay, Ecuador, 2500 meters, February 22, 1939 (Brown); and one from Bogotá, Colombia, March 20, 1938 (Osorno).

**Melanostoma (Carposcalis) ecuadoriensis,** new species

Figures 25, 59

A high-altitude species in which the front tibia of male has usually eight outwardly pointing black bristles, and face projecting well forward. Closely related to *punctulatum* and *fenestratum*. Length, 6.5 to 7 mm.

MALE: Face jutting forward with a very small tubercle, lightly dusted with white pollen, which is little punctate, but the punctation shows clearly in some specimens; the pile black, mid-stripe narrow, two shallow *longitudinal* grooves just below the antennae. Front brownish pollinose, the pile black, cheeks large, white pollinose and white pilose. Ocellar triangle black with black pile, the upper cilia long and black. Antennae not reaching the facial tubercle; the first two segments shining black and together as long as the third, which is reddish, more brownish above; the arista brown.

Thorax blackish, the mesonotum with brown pollen and long black pile; scutellum slightly rugose before the tip; the pile black, fringe yellow. Pleura bronze, more bluish posteriorly; the pile white, a few black hairs just below the wings.

Legs black, the apical half of the four front femora and their tibiae yellowish, the hind tibiae reddish. Front tibiae on the outside with a row of strong, straight, black bristles, eight or nine in number, the basal two or three short, the apical three long; they all slant apically but are not strongly curved at the middle as on *punctulatum*. Mid-tibiae with four long, bristle-like hairs, the hind tibiae rather shaggy, black haired on the apical half.

Wings hyaline, the stigma yellow. Squamae whitish, the border and fringe brown; halteres brown; plumule white.

Abdomen slender, tapering, black with triangular yellow spots on third and fourth tergites, occupying the basal half of the segment but completely isolated, their inner ends pointed. Genitalia shining black. Pile, as usual, longer on the sides toward the base, yellowish. Venter shining black.

FEMALE: Dissimilar. Facial pollen abundant, punctate, but the punctations smaller than on *punctulatum*, pile white; front broader across the ocelli than the antennal length, a narrow transverse depression on the lower half, upper half and around ocelli with bluish reflections, the pollen sparse; occipital pile yellow above but the cilia mostly black. Mesonotum shining, slightly dulled by very minute brownish pollen, the pile white with black hairs along the sides; pleura heavily white pollinose and with all kinky white pile. Pile of scutellum mostly white, the border hairs longer and black.

Abdomen more oval with large bronze spots covered with white pollen, a median shining vitta from the first tergite to the fifth. Venter covered with white pollen.

TYPE MATERIAL: Holotype, male, Cuicocha, Imbabura, Ecuador, 3200 meters, May 27, 1939 (F. M. and H. Brown). Allotype, female, Cuenca, Azuay, Ecuador, 2500 meters, February 22, 1939 (F. M. and H. Brown). Paratypes: Ecuador, (F. M. and H. Brown): nine males and six females, same data as holotype; one female, same data as allotype; one female, Hacienda Talahua, Bolivar, 3100 meters, April 28, 1939; two females, Riobamba, 2800 meters, March 1, 1939; one female, Riobamba, 2700 meters, April 19, 1939; one female, Uyumbicho, Pichincha, 2650 meters, November 15, 1938; and five females, Hacienda Teno, Chillo Valley, Pichincha, 2500 meters, November 10, 1938.

The females of this species will be distinguished with difficulty from both *fenestratum* with its narrower front, less protruding face, less punctation of the facial pollen, and *punctulatum* with its darker legs, more brilliant mesonotum, and larger punctations on the face.

Some of the female paratypes may repre-

sent a different species, especially those from Pichincha Province, but there are no reliable characters to separate them. More collecting will undoubtedly disclose additional new species belonging to this group (*Carposcalis* Enderlein), but I strongly oppose erecting new species based upon females only in this difficult group.

**Melanostoma meyeri,** new species

Figure 24

Face jutting forward, pollen sparse, abdomen with definite yellow spots. Length, 9 to 10 mm

FEMALE: Head shining black, the oral margin protruding, lightly dusted with white pollen, the tubercle very small, the pile sparse and pale; rugose area just above the cheeks next to the eyes. Cheeks reddish with white pile. Front black, very lightly pollinose, with a median sulcus in front of the median ocellus, reaching to the shallow transverse depression, pile black. Occiput whitish pollinose and white pilose, a few scattered black hairs above. Antennae yellow, darker above on the third oval segment; arista brown.

Thorax shining black, the mesonotum inconspicuously brownish pollinose in front of the scutellum, white pollinose on the humeri; pile white, short and sparse on the mesonotum. Scutellum shining black, the pollen thin, the pile very short and pale, no longer hairs on the rim, fringe yellow.

Four front legs yellow, basal third of their femora shining black, a darkened apical ring on the tibiae, tarsi darker. Hind legs black, narrow base and apex of femora and almost the basal half of the tibiae yellow. Pile of the legs thin and short, all yellow except black on the hind metatarsi.

Wings lightly tinged yellowish, the stigma brown. Squamae white, the fringe yellow; plumule white; halteres yellow.

Abdomen semi-shining black, with four pairs of isolated reddish yellow spots, first three oblique; pile short, longer on the sides of the second tergite; white, black on the discs of the tergites. Venter shining yellow, large black spots in the middle of each sternite.

TYPE MATERIAL: Holotype, female, near Mexico City, Mexico, 10,000 feet, July, 1936 (H. G. Meyer). Paratypes: five females, same data.

**Melanostoma tropicum** Curran

CURRAN, 1937, Amer. Mus. Novitates, no. 926, p. 3.

Face perpendicular, the sides thickly coated with cinereous yellow pollen. Legs reddish, third pair brown with the basal half reddish. Abdomen with three pairs of reddish spots. Length, 10 mm.

The holotype is a male from São Paulo, Brazil, which I have not seen. I have before me a female which I believe belongs to this species in spite of the different locality.

It is similar to the female of *luculentum*, new species. On *tropicum*, however, the hind femora are yellow on almost the basal half and the face is more perpendicular and less produced below. The front is blue-black with a broad transverse golden pollinose band in the depression, the pile black. Pile of the thorax is short and yellowish on a background of thin brownish pollen. The abdominal spots are similar to the female of *luculentum*, except on the third and fourth tergites, where they reach the apical third and half, respectively.

A single female, Baños, Ecuador, 2300 meters, July 21, 1939 (W. C. Macintyre).

**Melanostoma luculentum,** new species

Figures 26, 46

Closely related to *tropicum* Curran. Four front tibiae and femora yellow, the hind femora dark, facial pollen smooth and yellowish in color, abdomen with lineate spots. Length, 10 mm.

MALE: Face slightly protruding, the tubercle low and elongate, covered with whitish yellow pollen and pile, a broad shining black mid-stripe one-third the width of face which does not quite reach the antennae; cheeks more thinly white pollinose and thinly white pilose; front with more brownish pollen, the two rough areas just above the antennae shining, pile black. Antennae yellow, the third segment darkened on the upper half and at the

apex; arista reddish, darker toward the tip; first segment slightly longer than the second, the first two about as long together as the third. Upper occiput very thin, the cilia black; ocellar triangle black with black pile.

Thorax black, coated with brown pollen, heavier on the mesonotum, which has the usual broad, median, light brown vittae on the anterior half; the pile yellowish, rather long on the mesonotum and with darker hairs along the sides and near the scutellum, which is almost entirely shining with long yellowish to black hairs, rugose on the apical half, apex with two setulose hairs, the fringe yellow.

Legs yellow, the hind pair and all the tarsi dark brown; there is a dark streak on the upper side of the mid-femora toward the apex, and the hind femora are very narrowly yellow at the base and apex; pile yellow, black on the darkened areas.

Wings cinereous, with a slight smudge at the apex; the stigma dark brown. Squamae yellow, with black border and fringe; plumule white; halteres yellow with a darker knob.

Abdomen black with three pairs of lineate yellow side spots, the pair on the second tergite reaching from almost the base to the apical sixth, those on the third reaching from the base to the apical fifth, and the pair on the fourth reaching the apical third. The second and third pairs widen at the base nearly to the side margins but are not very distinct. Pile is, as usual, long and yellow along the sides on the anterior half, shorter and black apically. Venter is mostly shining, with a broad median black vitta, which is interrupted at the incisures.

FEMALE: Pollen of the face more golden in color; front shining black with a broad yellow pollinose band in the depression, pile black. Pile of the thorax and scutellum much shorter and all yellowish. Legs paler, the front coxae yellow, the tarsi mostly yellowish red, only the mid-segments of the front pair and the apical segments of the hind pair brownish. Abdomen with four pairs of yellow spots, those on the second tergite spreading out on the sides and converging posteriorly, an additional pair of fasciate spots on the fifth tergite.

TYPE MATERIAL: Holotype, male, Baños, Ecuador, 2300 meters, July 21, 1939 (W. C. Macintyre). Allotype, female, Pundoa, Ecuador, 2800 meters, July 17, 1939 (W. C. M.).

This species closely approaches *Rhysops*, but it has more of the general characteristics of *Melanostoma*. It is close to *tropicum* but has darker hind legs and the face is more prominent.

### **Melanostoma neotropicum** Curran

CURRAN, 1937, Amer. Mus. Novitates, no. 926, p. 4.

I have been unable to recognize this species; apparently it has the general appearance of *R. nigrans*, new species, but the antennae are more typically those of a *Melanostoma*. In my key to the *Rhysops* species it will run to *nigrans* and *columella*, but the transverse depressions of the face are four in number, which will separate out *nigrans*, and the abdominal spots are lineate on the male, which will eliminate *columella*. All three species are from Brazil, *neotropicum* recorded from São Paulo on the basis of a single male.

### **Melanostoma browni,** new species

Figures 27, 28, 44

Face perpendicular, carinate, the sides thickly golden pollinose, four front femora and tibiae yellow. Length, 10 mm.

MALE: Head black; face nearly perpendicular, the tubercle low yet broad, carinate above the tubercle, mid-stripe broad and shining; sides of the face, front above the shining black arc, and a narrow band below the antennae thickly golden pollinose; pile of face yellow, of front black; cheeks shining black with thin, more whitish pollen, pile white; ocellar triangle black with thin yellowish pollen, pile black; occiput with yellow hairs above, the long cilia black, pollen and pile paler below. Antennae reddish yellow, the first segment darker, the third darkened above, first two segments together about as long as third; arista long and black.

Thorax black, the shine of the mesonotum obscured by brown pollen, the usual

two median pollinose vittae on the anterior half, pile long and yellow becoming black along the sides; pleura also coated with brownish pollen which is whitish posteriorly, the pile yellow; scutellum with long black hairs with some very short golden hairs intermixed; slightly rugose on the apical half, fringe long and yellow.

Legs yellow, the apical two-thirds of the hind femora, all but the apex of the hind tibiae, and the hind tarsi black to brown, the apical segments of the other tarsi usually brownish; pile sparse, black on the dark areas and on all the tibiae, long yellow hairs on the hind femora becoming black apically.

Wings hyaline, the stigma yellow. Squamae, halteres, and plumule yellow.

Abdomen long and slender, black with three pairs of lineate yellow spots, the pair on the second tergite separated from the base, sides, and apex; those on the third tergite reach from the base to the apical five-sixths; those on the fourth tergite similar but reaching only the apical half, all isolated from the sides; the pile long and yellow on the sides but black and shorter posteriorly.

TYPE MATERIAL: Holotype, male, Hacienda Talahua, Bolivar, Ecuador, 3100 meters, April 28, 1939 (F. M. and H. Brown). Paratypes: 12 males, same data.

The females of this species may be indistinguishable from *bolivariensis*, and I strongly suspect that some of the females listed under the latter species may be *browni*, but none of them exhibit the rather low but sharp ridge of the face above the tubercle, and they are also shorter.

**Melanostoma bolivariensis,** new species

Figures 29, 45

A dark species with even brown pollen on the face; abdominal spots small, elongate. Length, 7 to 8 mm.

MALE: Face nearly perpendicular, projecting forward only slightly, the tubercle low but elongate, slopes evenly brown pollinose and yellow pilose, the mid-stripe bare almost to the antennae; cheeks thinly whitish pollinose and white pilose; front thickly covered with brown pollen and black pile except on the shining arch above the antennae; ocellar triangle very thinly brownish pollinose, the pile black; cilia black; occipital pile and pollen yellow, becoming white below. Antennae reddish, the first segment darker and the third black on the upper half; arista black.

Thorax black, the mesonotum semi-shining metallic; covered with brown pollen and brownish pile of various lengths, the tips black; pile black above the wings; two median whitish pollinose vittae on the anterior half; scutellum slightly rugose on the disc, the long pile black, fringe yellow; pleura with thinner yellowish pollen and pile.

Legs black, apical half of the front femora and their tibiae, apex of the mid-femora and their tibiae, the basal two segments of the mid-tarsi, and the basal half of the hind tibiae reddish to yellow. In teneral specimens the four front legs are often entirely yellow. Pile inconspicuous, the long hairs yellow.

Wings hyaline, the stigma yellow; squamae whitish, the border brown, fringe yellow; plumule white; halteres yellow, the knob dark.

Abdomen narrow, black with two pairs of narrow reddish side spots, the first pair on the third tergite reaching from the base to the apical half, the second pair on the fourth tergite smaller, reaching from the base to the apical third; white pollen on these spots; abdomen shining along the sides; the pile pale; genitalia small.

FEMALE: Similar, the facial pollen somewhat paler; frontal pollen in a transverse band on the lower half in a distinct depression, upper half nearly bare; front at vertex about two and one-half times as wide as ocellar triangle. Mesonotal pile sparse and much shorter. Abdominal spots often absent but when they show clearly are reddish dashes converging posteriorly. Legs more extensively yellow, the hind femora often yellow on the basal fourth.

TYPE MATERIAL: Holotype, male, Hacienda Talahua, Bolivar, Ecuador, 3100 meters, April 28, 1939 (F. M. and H. Brown). Allotype, female, same data. Paratypes: 22 males and 23 females, same data.

The numerous specimens of this species

taken on the same day strongly suggest that the species is very common and may be known by some other name. However, it was not represented from any other localities in Ecuador where F. M. Brown collected. As indicated under *browni*, some of these females may belong to that species.

**Melanostoma altissimum,** new species

Figures 48, 49

Very similar to *bolivariensis*, new species, but the facial pile of the male is mostly black and the abdominal spots are entirely different, quadrate on the male and triangular on the female. It may represent only a variety. Length, 8 mm.

MALE: The description of *bolivariensis* will apply except for the following characters: Pile of the face mostly black, yellow only on the lower slopes; pile of the mesonotum mostly black; color of the legs more extensively black, the front tibiae mostly brownish with a dark median ring; pile of the genitalia black (yellow on *bolivariensis*); abdominal spots wider, almost quadrate, reaching less than half the length of the third and fourth tergites. Second tergite shows evidences of narrow elongate spots.

FEMALE: Differs from *bolivariensis* only in the darker legs and triangular spots on the abdomen; second tergite with a pair of elongate oval spots; third and fourth with triangular spots; third, inner margins parallel, their outer margins converging, separated from the lateral margins; smaller spots on the fifth tergite. The spots are quite similar to the common North American species *pictipes* Bigot.

TYPE MATERIAL: Holotype, male, Cuicocha, Imbabura, Ecuador, 3200 meters, May 27, 1939 (F. M. and H. Brown). Allotype, female, same data. Paratypes: two males, same data; and one male, Bogotá, Colombia, March 25, 1937 (Osorno), in the collection of F. M. Hull.

This species may prove to be only a variation of *bolivariensis*, new species, but the constant characters of the latter species, as seen in 47 specimens, indicate that *altissimum* is distinct. The head shapes and pollen of the two are identical.

**Melanostoma scutigerum,** new species

Figure 30

Blue-black with a row of bristles on the rim of the scutellum. Length, 7 to 7.5 mm.

MALE: Face perpendicular with a broad oval shining mid-stripe; the sides evenly white pollinose, converging just below the antennae; the pile black; tubercle low but definitely limited above. Cheeks lightly white pollinose and white pilose. Front with a prominent transverse shining black ridge just above the antennae, with a pair of shallow depressions above, and a median sulcus, which reaches to the brownish to blackish pollinose apex; pile black. Ocellar triangle brownish pollinose, pile black; upper occiput black pilose and brownish pollinose; lower occiput white pollinose and white pilose. Antennae yellow, the third segment brown on the apex and above; first two segments about equal in length, together equal to the third; arista black.

Thorax black, covered with brown to black pollen and black pile; the sides of the mesonotum, the pteropleura, and hypopleura more shining bluish; two median whitish pollinose vittae on the anterior half of the mesonotum. Scutellum non-rugose, with black pile and a series of about 12 black spines on the rim, the downward projecting fringe black.

Legs black, brownish pollinose; the pile black, more yellowish brown beneath the tarsi.

Wings tinged with brown, darker along the fore margin. Squamae brown, the fringe yellowish; plumule brown; halteres black with yellow knobs.

Abdomen oval, everywhere black; no indication of yellowish spots; the pile black, white in areas where spots would normally occur.

FEMALE: Very similar. The front with a broad transverse depression white to brownish pollinose, which is black near the ocelli; ocellar area shining blue. Scutellar fringe yellow. Squamae yellow. Pile of the abdomen shorter and paler anteriorly.

TYPE MATERIAL: Holotype, male, Uyumbicho, Pichincha, Ecuador, 2700

meters, November 4–13, 1938 (F. M. Brown). Allotype, female, same data.

**Melanostoma inflatifrons,** new species
Figure 31

A small black species with large cheeks and front, face evenly pollinose, the facial tubercle large and shining. Length, 5 to 7 mm.

FEMALE: Face, cheeks, and front evenly coated with grayish to yellowish pollen; the prominent tubercle, a streak from the oral edge to the eyes, and an arc above the antennae shining. Cheeks very full, the front wide, the ocellar triangle only one-third the width of front at vertex. Pile of face and cheeks white, of the front long and black, of the upper occiput black with a few scattered white hairs. Antennae black, the third segment yellow at the base and below.

Thorax black and grayish pollinose, with faint brownish vittae on the mesonotum; pile white, black on the mesonotum. Scutellum with a pre-apical depression; pile black on the apex with longer black hairs.

Legs reddish brown; the four front femora black on the basal fourth, the hind femora on the basal half; all the tarsi black. Pile mostly pale.

Wings cinereous, the stigma brown. Squamae white, the edge and fringe brown; plumule white; halteres brownish.

Abdomen black, pollinose, with three pairs of reddish yellow hoary spots: on the second tergite as side median triangles, on the third and fourth tergites as transverse spots reaching the sides but not touching the basal margins. The fifth tergite with small similar spots in the basal corners. Venter white pollinose, broadly yellow at the incisures.

MALE: Similar, the front inflated and broad; pile of face and pleura mostly black. Pile on the legs longer and many of the hairs are black, but no peculiar hairs or bristles present.

TYPE MATERIAL: Holotype, female, Hacienda Talahua, Bolivar, Ecuador, 3100 meters, April 28, 1939 (F. M. and H. Brown). Allotype, male, same data. Paratypes: one pair, same data.

**Melanostoma rex,** new species
Figures 32, 50

A large species with protruding face, which is carinate above the tubercle; antennae black; abdomen with lineate yellow side spots. Length, 10 to 11 mm.

MALE: Head black; sides of the face broadly, cheeks thinly, and the front except the shining arc above the antennae, yellow to golden pollinose; the pile black except for yellow hairs on the lower slopes of the face, the cheeks, and the lower occiput. Ocellar triangle with golden pollen and long black hairs, cilia black. Oral tips protruding well forward and downward; the tubercle broad and long; face with a very broad stripe free of pollen, and with a median sulcus just below the antennae. A very prominent triangular rugose area on the slopes of the face opposite the tubercle. First segment of antennae longer than the second, shorter than the third, entirely black; arista black.

Thorax semi-shining, the mesonotum with golden pollen and black and yellow hairs intermixed, nearly all black along the sides, the usual two median gray pollinose vittae on the anterior half; scutellum shining but with a thin coating of golden pollen, the pile very long and black with a few shorter yellow hairs intermixed, the fringe long and yellow. Pleura yellowish white pollinose, the pile yellow, black on the mesopleural hump and just below the wings on the pteropleura.

Legs black; the four front femora yellow except for the basal one-fourth to one-third; the four front tibiae yellow except a pre-apical dark ring; hind femora on the underside near the apex also yellowish; apical segment of the four front tarsi reddish yellow; pile mostly black, with a few yellow hairs toward the bases of the femora.

Wings hyaline, the stigma yellow. Squamae yellow, with brown border and fringe; plumule and halteres yellow, the knobs darkened.

Abdomen elongate, slender, black; second to fourth tergites each with a pair of narrow yellow side vittae, those on the second entirely isolated, those on the third reach the base and extend to the

apical fifth, those on the fourth similar and extend to the apical third. Venter yellow, with a broad, median, black vitta.

FEMALE: Very similar, the legs much paler; the four front femora and tibiae yellow; the hind femora yellow except for a dark streak on the outside near the apex, in some specimens most of the hind femora dark. Pile on the mesonotum not so long, fewer black hairs.

TYPE MATERIAL: Holotype, male, Hacienda Talahua, Bolivar, Ecuador, April 28, 1939 (F. M. and H. Brown). Allotype, female, same data. Paratypes: 14 males and eight females, same data.

The produced face and black antennae readily place this large species.

### **Melanostoma palliatum,** new species

Figures 33, 35, 51, 52

Face slightly receding with a large rounded tubercle similar to *fervidum;* third segment of antenna almost circular; pleura reddish; abdomen with prominent yellowish red spots on the male. Length, 9 to 10 mm.

FEMALE: Head black, the face and lower half of the front except the tubercle and arch above the antennae covered with brownish pollen, the pile black; cheeks yellowish pollinose and yellow pilose; upper half of front and ocellar triangle shining, the pile black, becoming brown on the vertex and occiput; pollen of occiput brown. Antennae reddish; the first segment black; the third blackened on the upper third; the third almost round; arista short, black. This species has only a small faint rugose area on the face opposite the tubercle.

Mesonotum shining with coppery reflections, lightly whitish pollinose on the sides; pile short and golden in color with intermixed longer black hairs on the disc, white on the notopleura; scutellum emarginate with golden pile and a few long black hairs, which are more numerous on the rim, the fringe yellow; pleura reddish, with white pollen and pile. Notopleura with prominent tubercle.

Legs reddish, the tarsi darker; pile mostly yellowish black above on the tarsi, inconspicuous except for longer hairs on the outsides of the femora.

Wings hyaline; the stigma brownish. Squamae yellow, with brown border and fringe; halteres yellow with black knobs; plumule white.

Abdomen oval, semi-shining black with four pairs of yellowish spots, which are located in the basal corners of the second to fifth tergites. All spots coated with white hoar pollen. First segment narrowly yellow on the sides; spots on the second tergite large, reaching the apical third; those on the third and fourth tergites fasciate, reaching only about one-third the length of segment; those on the fifth triangular; all spots go over the sides. Venter yellow, coated with white pollen.

MALE: Darker, the pile of the head nearly all black; on the mesonotum many more black hairs and those on the pleura yellow. Only the meso- and ptero-pleura dark reddish. Legs black, the front legs somewhat reddish brown. Abdomen with prominent large oval spots, which occupy most of the third and fourth tergites, smaller on the second tergite.

The spotting on the abdomen and the slightly receding face suggest *Xanthandrus,* but I know of no species of this genus with reddish pleura and round third antennal segment. The facial tubercle is also too prominent for a typical *Xanthandrus.*

TYPE MATERIAL: Holotype, female, Minza Chica, Tungurahua, Ecuador, 3200 meters, April 8, 1939 (F. M. Brown). Allotype, male, same data. A second female is definitely a variety: the mesonotum has a bluish cast, and the abdominal spots are narrow and much smaller. It was taken at Hacienda Talahua, Bolivar, Ecuador, 3100 meters, April 28, 1939 (F. M. Brown).

### MELANOSTOMA SUBGENUS TALAHUA, NEW SUBGENUS

Figure 36

Separated from *Melanostoma* by the large genitalia of the male; styles and cerci elongate, nearly as long as the fourth tergite.

TYPE: *Talahua fervidum,* new species.

**Melanostoma (Talahua) fervidum,** new species

Figures 34, 36, 53

A large species; face perpendicular with a well-rounded tubercle; third segment of antennae large and rounded; abdomen with prominent yellow spots; genitalia of male elongate. Length, 11 to 12 mm.

MALE: Head large, wider than the thorax and abdomen; covered with yellowish gray pubescent-like pollen, shining black on the prominent round tubercle, oral tips, ocellar triangle, and a large triangular spot on the front; sides of face with a faint, slightly rugose area; pile on front black, on cheeks and face yellow, on ocellar triangle black, on the occiput yellow except the upper cilia, which are black. Antennae black, the second segment and the lower basal corner of the third red; arista bare, black.

Thorax black, the mesonotum shining, covered with yellow pollen and short golden pile with many longer black hairs that appear yellowish at the base; these hairs become longer posteriorly and longer on the scutellum, which has a deep groove next to the rim (emarginate), fringe of scutellum yellow; pleura yellow pollinose and pilose.

Legs black; the front femora yellow on the apical two-thirds, the middle femora on the apical third, the hind on the extreme apex; all the tibiae yellow with a dark ring near the middle, more prominent on the hind pair; the pile yellow, black on the hind tibiae and above on the tarsi.

Wings smoky; the stigma brown; squamae and plumule yellow; halteres yellow, with a darkened knob.

Abdomen elongate, black, with four pairs of yellow side spots; first tergite shining, second with the broad sides yellow and only the apex black, third with similar but wider spots, fourth with still wider but less elongate spots, fifth with a pair of small spots in the basal corners. Pile yellow on the sides basally, black down the middle and on the apical segments. Genitalia very large, the styles long and black, the cerci elongate and yellow.

FEMALE: Very similar but the abdominal spots are somewhat shorter. Front narrow above, not the much wider than ocellar triangle, shining above with a pollinose band below.

TYPE MATERIAL: Holotype, male, Hacienda Talahua, Bolivar, Ecuador, 3100 meters, April 28, 1939 (F. M. and H. Brown). Allotype, female, same data. Paratypes: three males and one female, same data.

**Melanostoma columbianum** Enderlein

ENDERLEIN, 1937, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 198.

I have been unable to recognize this species among the many specimens at hand from Ecuador. It should be easily recognized by the microscopic transverse furrows (scratches) "feinen und dichten." The facial pollen is brownish, the third segment of the antennae one and one-third times as long as wide, abdomen with two pairs of yellowish oblique spots; legs reddish yellow, the hind femora light brown. Length, nearly 8 mm. It is unfortunate that Enderlein has used the name *columbianum* in two such closely related genera as *Rhysops* and *Melanostoma*. *M. columbianum* was described from a single female.

**Melanostoma limbatum** Enderlein

ENDERLEIN, 1937, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 198.

I have been unable to recognize this species, which was described from northern Argentina. The pollen of the face is white and punctate on the female, apparently non-punctate on the male. Third segment of the antennae one and two-thirds times as long as wide. Thorax shining black, with thick brownish yellow pile. Abdomen (male) with three pairs of yellow spots (female with four). Legs yellowish, the hind pair brown except the knees and base of the femora.

I know of no species treated here that might be this except possibly *Rhysops lineata* Fluke, which was also described in 1937.

In addition to the species previously discussed, the following four species, all of which apparently belong in the genus *Melanostoma, sensu lato,* have been described from South America. The original descriptions are here repeated in order to complete a review of the tribe.

**Melanostoma lundbladi** (Enderlein)

*Carposcalis lundbladi* ENDERLEIN, 1940, *in* Skottsberg, The natural history of Juan Fernandez and Easter Island, vol. 3, p. 665.

"Length, $5^1/_2$ mm.; length of wing, $6^1/_3$ mm.

"FEMALE: Head black with thick brownish-tinged grayish white pollen, that on the sides of the face with numerous punctiform spots. Front, vertex, and occiput somewhat bluish metallic, wholly without pollen. Face not excavated above the strong tubercle, which is situated above the lower third. Above with strong keel, the tubercle compressed above; tubercle and keel wholly narrow, bare, and polished. Antennal pits without a median projection. Antennae wholly black, first segment large, as long as wide; second segment narrow, somewhat shorter than broad; third unusually broad and somewhat hatchet shaped. Vertex and cheeks with white erect pubescence. Thorax black above, moderately bare and with bluish sheen, that on the scutellum more obvious than reddish blue, that toward the back of the mesonotum somewhat stronger and clear blue. Underside, plurae, and humeri with white pollen. Plurae with longer fine white hair. Halteres and squamae rusty brownish. Abdomen black, the anterior third with the exception of the middle fourth with dull grayish color, the whole somewhat with weak mother-of-pearl sheen. Legs, except the coxae, rust colored; front tarsi brown, the fourth and fifth segments of the middle and hind tarsi brownish. First segment hind tarsi two-thirds as long as the tibia and somewhat strongly thickened. Wings hyaline, stigma pale brownish yellow, veins yellowish brown.

"Juan Fernandez: Masatierra, August, 1917." (Translated by C. H. Curran.)

**Melanostoma reynoldsi** Shannon and Aubertin

SHANNON AND AUBERTIN, 1933, Diptera of Patagonia and South Chile, pt. 6, fasc. 3, p. 134.

"Rather a small fly with bluish abdominal markings and dark shining green thorax; the face, except in the middle line, is covered with grey tomentum and has a punctate appearance.

"Male, Female. Length, 7 mm.; wing, 6.5 mm.

"Head: Eyes bare, in male contiguous for a short space, in female separated at vertex by distance equal to two-thirds width of one eye; frons dull greenish-black, rather more shining in female than in male, clothed with upstanding black hairs; face in profile slightly tuberculate, not protruding, clothed, except for central and two lateral streaks, with grey tomentum, through which the shining black ground shows in numerous small spots (as in *M. fenestratum*, Macq.); antennae dark brown, third segment reddish below.

"Thorax dull greenish-black, pale-haired, pubescence shorter and thinner in female than in male.

"Abdomen dull black, pale-haired, in male with pale bluish-grey spots on anterior external margins of third and fourth visible segments, female with a pair of spots on second visible segment as well.

"Wings hyaline; squama white with pale fringes; halteres dark brown.

"Legs dark brown, darker in male than in female; hind metatarsi considerably swollen in male, less so in female.

"Holotype, male, allotype, female, and paratypes, 4 males, Tierra del Fuego, Rio Grande, Estancia Viamonte, xii, 1929 (P. W. Reynolds)."

**Melanostoma edwardsi** Shannon and Aubertin

SHANNON AND AUBERTIN, 1933, Diptera of Patagonia and South Chile, pt. 6, fasc. 3, p. 133.

"A fly with yellow abdominal markings, brown legs and greyish thorax; face thickly covered with grey tomentum.

"Male. Length, 10 mm.; wing, 8 mm.

"Head: Eyes bare, contiguous for a short space; ocellar triangle, frons and face black, latter evenly covered with grey tomentum and bearing a sparse covering of pale and dark hairs; face in profile tuberculate, not markedly protuberant, opening of epistome being about twice as long as broad; antennae black.

"Thorax shining aeneous, pale-haired,

dorsum with two faint longitudinal stripes; humeri, post-alar calli and pleurae very thinly dusted with grey tomentum.

"Abdomen black, second, third, fourth and fifth visible segments with paired yellow spots, thinly dusted with grey tomentum; venter testaceous.

"Wings hyaline; squama white with pale fringe; halteres with dark brown knobs and rather paler stems.

"Legs: front and middle legs reddish-brown, femora and tarsi darkened; hind legs dark brown, femora almost black in middle; hind metatarsi slightly swollen.

"Holotype, male, Bariloche."

**Melanostoma productus** (Macquart)

*Syrphus productus* MACQUART, 1850, Diptères exotiques, suppl. 4, p. 154.

"Thorax greenish, shiny. Abdomen elongate, black with lateral yellow spots. Head greenish, face produced. Legs testaceous, the posterior femora brownish.

"Length, 8 mm.

"MALE AND FEMALE: Face produced, blackish green, covered with white pollen on the sides. Front of female with transverse depression. Antennae with the first two segments black, the third oval with rounded apex, of a yellowish brown color in the male; brownish black in the female. Abdomen with second, third, and fourth segments, with triangular yellow spots, the fifth bronze. The venter with similar spots. Legs testaceous, posterior femora brown with the end testaceous; first segment of posterior tarsi a little swollen. Wings with the stigmal cell yellowish, the venation normal.

"From Chile." (Translated by C. H. Curran.)

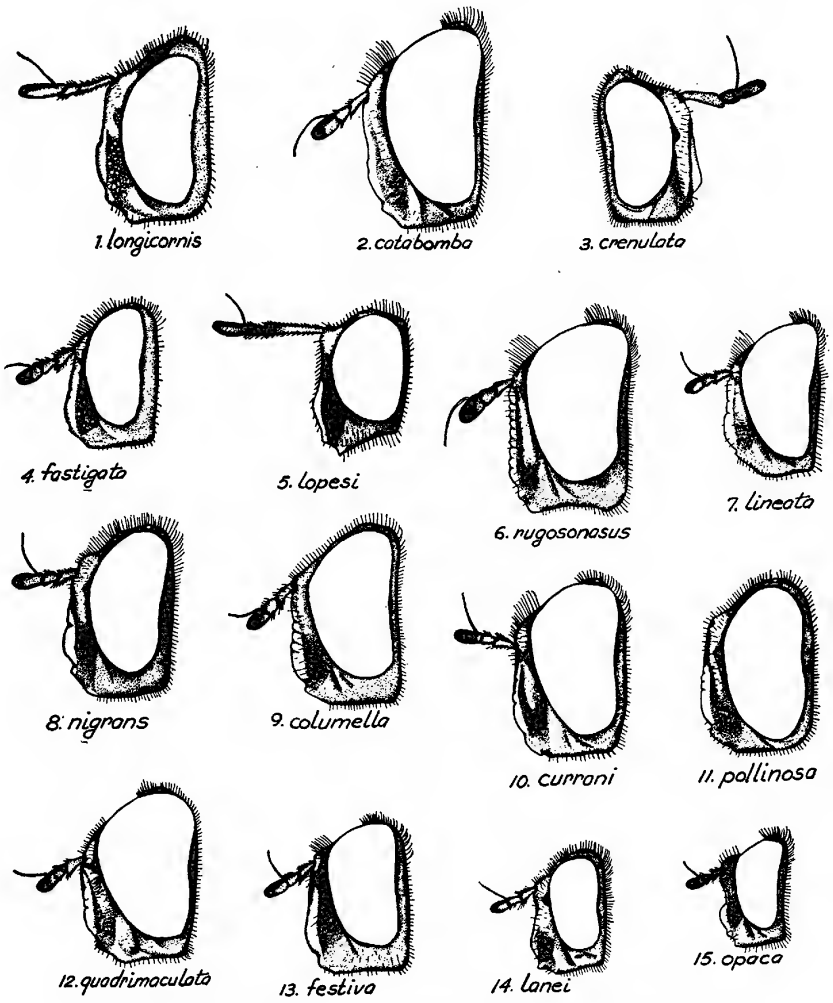


Fig. 1. *Rhysops longicornis* (Williston), profile of head of female.
Fig. 2. *Rhysops catabomba* (Williston), profile of head of male.
Fig. 3. *Rhysops crenulata* (Williston), profile of head of female.
Fig. 4. *Rhysops fastigata*, new species, profile of head of female.
Fig. 5. *Rhysops lopesi*, new species, profile of head of female.
Fig. 6. *Rhysops rugosonasus* (Williston), profile of head of male.
Fig. 7. *Rhysops lineata* (Fluke), profile of head of male.
Fig. 8. *Rhysops nigrans*, new species, profile of head of female.
Fig. 9. *Rhysops columella*, new species, profile of head of female.
Fig. 10. *Rhysops currani* Fluke, profile of head of male.
Fig. 11. *Rhysops pollinosa* Hull, profile of head of female.
Fig. 12. *Rhysops quadrimaculata* Hull, profile of head of male.
Fig. 13. *Rhysops festiva*, new species, profile of head of male.
Fig. 14. *Rhysops lanei* (Fluke), profile of head of female.
Fig. 15. *Rhysops opaca*, new species, profile of head of male.
All drawings were made with the aid of the camera lucida.

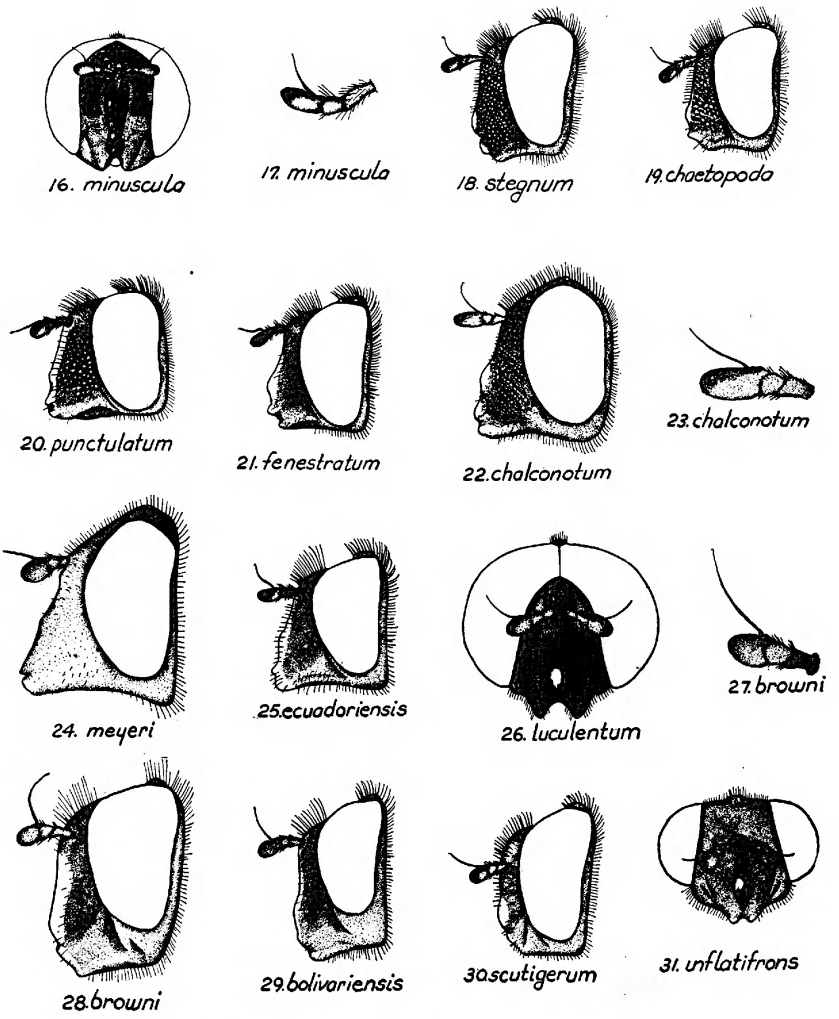


Fig. 16. *Rhysops minuscula*, new species, front view of head of male.
Fig. 17. *Rhysops minuscula*, new species, antenna.
Fig. 18. *Melanostoma stegnum* (Say), profile of head of male.
Fig. 19. *Melanostoma chaetopoda* Davidson, profile of head of male.
Fig. 20. *Melanostoma punctulatum* Wulp, profile of head of male.
Fig. 21. *Melanostoma fenestratum* (Macquart), profile of head of male.
Fig. 22. *Melanostoma chalconotum* (Philippi), profile of head of male.
Fig. 23. *Melanostoma chalconotum* (Philippi), antenna.
Fig. 24. *Melanostoma meyeri*, new species, profile of head of female.
Fig. 25. *Melanostoma ecuadoriensis*, new species, profile of head of male.
Fig. 26. *Melanostoma luculentum*, new species, front view of head of male.
Fig. 27. *Melanostoma browni*, new species, antenna.
Fig. 28. *Melanostoma browni*, new species, profile of head of male.
Fig. 29. *Melanostoma bolivariensis*, new species, profile of head of male.
Fig. 30. *Melanostoma scutigerum*, new species, profile of head of male.
Fig. 31. *Melanostoma inflatifrons*, new species, front view of head of female.
All drawings were made with the aid of the camera lucida.

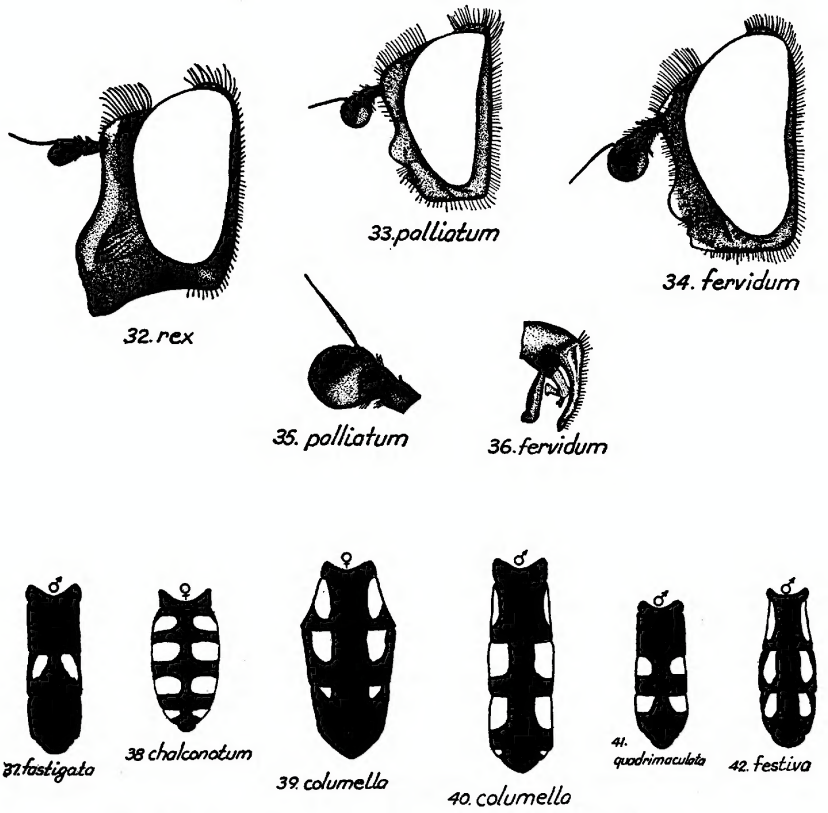


Fig. 32. *Melanostoma rex*, new species, profile of head of male.
Fig. 33. *Melanostoma palliatum*, new species, profile of head of male.
Fig. 34. *Melanostoma fervidum*, new species, profile of head of male.
Fig. 35. *Melanostoma palliatum*, new species, antenna.
Fig. 36. *Melanostoma fervidum*, new species, genitalia.
Fig. 37. *Rhysops fastigata*, new species, abdomen, male.
Fig. 38. *Melanostoma chalconotum* (Philippi), abdomen, female.
Fig. 39. *Rhysops columella*, new species, abdomen, female.
Fig. 40. *Rhysops columella*, new species, abdomen, male.
Fig. 41. *Rhysops quadrimaculata* Hull, abdomen, male.
Fig. 42. *Rhysops festiva*, new species, abdomen, male.
All drawings were made with the aid of the camera lucida.

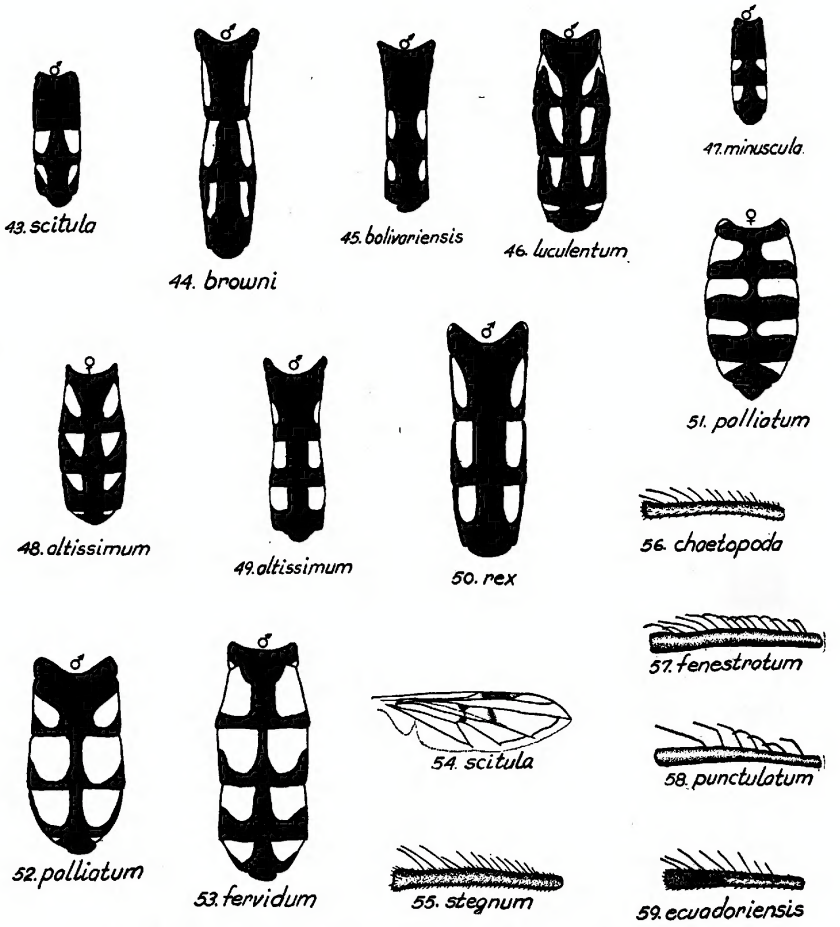


Fig. 43. *Rhysops scitula* (Williston), abdomen, male.
Fig. 44. *Melanostoma browni*, new species, abdomen, male.
Fig. 45. *Melanostoma bolivariensis*, new species, abdomen, male.
Fig. 46. *Melanostoma luculentum*, new species, abdomen, male.
Fig. 47. *Rhysops minuscula*, new species, abdomen, male.
Fig. 48. *Melanostoma altissimum*, new species, abdomen, female.
Fig. 49. *Melanostoma altissimum*, new species, abdomen, male.
Fig. 50. *Melanostoma rex*, new species, abdomen, male.
Fig. 51. *Melanostoma palliatum*, new species, abdomen, female.
Fig. 52. *Melanostoma palliatum*, new species, abdomen, male.
Fig. 53. *Melanostoma fervidum*, new species, abdomen, male.
Fig. 54. *Rhysops scitula* (Williston), wing.
Fig. 55. *Melanostoma stegnum* (Say), front tibia of male.
Fig. 56. *Melanostoma chaetopoda* Davidson, tibia of male.
Fig. 57. *Melanostoma fenestratum* (Macquart), tibia of male.
Fig. 58. *Melanostoma punctulatum* Wulp, tibia of male.
Fig. 59. *Melanostoma ecuadoriensis*, new species, tibia of male.

All drawings were made with the aid of the camera lucida, bases of the tibiae are to the right.